Amendments to the Claims:

The following listing of claims will replace all prior versions, and listings, of claims in the application:

1.-36. (Canceled)

37. (Currently Amended) A microfluidic device for isolating and/or agitating contents of the device, comprising:

an operative cavity,

an inlet duct that communicates with the operative cavity by way of a first valve with no moving parts,

an outlet duct that communicates with the operative cavity by way of a second valve with no moving parts,

two gas trapping chambers, one of the two gas trapping chambers communicating with the inlet duct by way of a first connecting channel and the other gas trapping chamber communicating with the outlet duct by way of a second connecting channel, and

a heat exchange device that exchanges heat with one and/or the other gas trapping chamber to control a pressure of a gas in one and/or the other gas trapping chamber,

wherein the pressure of the gas in the one and/or the other gas trapping chamber controls the flow of ~~the~~ a liquid in the device.

38. (Previously Presented) The microfluidic device of claim 37, wherein the first valve with no moving parts and the second valve with no moving parts are capillary valves.

39. (Previously Presented) The microfluidic device of claim 38, wherein a geometry of edges or walls of each of the capillary valves is constructed to generate an overpressure at a meniscus between the gas and the liquid, the overpressure substantially preventing displacement of the liquid beyond the capillary valve.

40. (Previously Presented) The microfluidic device of claim 39, wherein each of the capillary valves comprises a base portion disposed at a proximal end of the capillary valve with respect to the operative cavity,

wherein a cross section of the base portion widens in a direction of a concavity of the meniscus if the liquid is a wetting liquid, or the cross section of the base portion narrows in the direction of the concavity of the meniscus when the liquid is not wetting liquid.

41. (Previously Presented) The microfluidic device of claim 37 further comprising:

two isolating chambers,

the isolating chambers being disposed between the operative cavity and a respective one of the inlet duct and the outlet duct,

wherein each isolating chamber is capable of being in an open position that establishes communication between the respective one of the inlet duct and the outlet duct with an outside, and a closed position that isolates the respective one of the inlet duct and the outlet duct from the outside.

42. (Currently Amended) The microfluidic device of claim 38 further comprising:

two expansion chambers, one of the two expansion chambers being disposed between the operative cavity and the inlet duct, and the other of the two expansion chambers being disposed between the operative cavity and the outlet duct,

the one of the two expansion chambers being disposed between the operative cavity and the inlet duct communicating on one side thereof with the operative cavity by way of the first valve with no moving parts and on another side thereof with the inlet duct by way of ~~another~~ a third valve with no moving parts;

the other of the two expansion chambers communicating on one side thereof with the operative cavity by way of the second valve with no moving parts and on another side thereof with the outlet duct by way of ~~another~~ a fourth valve with no moving parts.

43. (Previously Presented) The microfluidic device of claim 42, wherein

the first connecting channel connects the one of the two gas trapping chambers that communicates with the inlet duct with the one of the two expansion chambers disposed between the operative cavity and the inlet duct, and

the second connecting channel connects the other of the two gas trapping chambers with the other of the two expansion chambers.

44. (Currently Amended) The microfluidic device of claim 42, wherein ~~a capillary~~the first valve with no moving parts is disposed between the first connecting channel and the one of the two gas trapping chambers that communicates with the inlet duct, and

~~a different capillary~~the second valve with no moving parts is disposed between the second connecting channel and the other of the two gas trapping chambers.

45. (Previously Presented) The microfluidic device of claim 42, wherein the two expansion chambers are substantially identical in volume.

46. (Previously Presented) The microfluidic device of claim 37, wherein the two gas trapping chambers are substantially identical in volume.

47. (Previously Presented) The microfluidic device of claim 37, further comprising:

an incubation chamber having an outlet that communicates with the inlet duct, and

wherein the operative cavity comprises particles that form a support functionalized with a ligand.

48. (Previously Presented) The microfluidic device of claim 37, further comprising:

a heater in contact with the inlet duct.

49. (Previously Presented) The microfluidic device of claim 48, further comprising:

a particle retaining device in contact with the inlet duct, the particle retaining device being disposed downstream with respect to the heater.

50. (Currently Amended) The microfluidic device of claim 49, wherein the particle retaining device is a magnetic particle retaining means~~magnet~~.

51. (New) The microfluidic device of claim 37, wherein the device is configured to retain a gas in the two gas trapping chambers when the two gas trapping chambers are at a filling temperature and the device is configured to isolate the operative cavity such that a leakage of the liquid and/or a diffusion of particles contained in the liquid to the inlet duct and the outlet duct is prevented when the two gas trapping chambers are at an isolating temperature that is greater than the filling temperature.